Cercyon granarius Erichson (Col., Hydrophilidae) confirmed as British

By J. A. Parry*

This is in effect a sequel to the excellent paper on the less well-known British species of the genus contributed by Mr. A. A. Allen (1969).

In July I submitted to J. Huijbregts of the Natural History Museum, Leiden, Holland, a number of specimens of a *Cercyon* of the *tristis* group, with the suggestion, that they were *granarius* Erichson, a species doubtfully known as British. He has kindly confirmed that they are indeed that species, and the place of *C. granarius* on the British list, until now insecure, is thus firmly established.

Heretofore little appears to have been known about *granarius*. Possibly its presence here would have been proved earlier were it not for the absence of a key which effectively identifies the species and separates it from its nearest congener *convexiusculus* Stephens. The species was first stated to occur in Britain by G. R. Crotch (Rye, 1869).[1] Fowler accords it a place in his *Coleoptera of the British Islands* (1887), where he calls it *granarius* Thomson in the text and *granarius* Erichson in his key. Here Fowler distinguishes *granarius* from *'lugubris'* (*convexiusculus* and/or *sternalis* Sharp) by the greater breadth of the second joint of the maxillary palps, which whilst reasonably constant is comparative at best and in practice depends on the angle at which the palps are set. His description in the text is very accurate, and emphasizes the broad mesosternal lamina, which is the chief diagnostic feature of the species (as first pointed out by C. G. Thomson in 1867).

Sharp (1918), in his paper introducing *C. sternalis* and *C. pumilo* (which latter has not survived as a species), gives a quite reasonable description of *granarius*, which accords well with that in Continental literature. It is the more surprising therefore[2] that his single specimen to which he refers on page 275 (given to him by Crotch in 1869) should prove to be *convexiusculus* (Allen 1969[1], folowing Balfour-Browne *in litt.*).

Joy, in his *Handbook of British Beetles* (1932), does not include *granarius*, evidently considering that its presence had

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[1] According to Rye (1869) it was published in Newman's *Entomologist*, no. 53 (full reference not to hand). I take this opportunity to correct any error in my 1969 paper, kindly pointed out by Mr. Parry: 1879, given (p. 213) as the year in which *granarius* was introduced to our list, should of course be 1869. This was probably an overlooked misprint. — A.A.A.

[2] I can only agree with Mr. Parry here. It is not hard to see how Crotch and the early recorders of *granarius* in Britain may, possibly, have mistaken *sternalis* (long before it was separated) for 'lugubris', and the latter for *granarius*; but this cannot apply to Sharp, who dealt with all three species in his 1918 paper. — A.A.A.

not been properly substantiated. In view of the opinions expressed about Sharp's specimen Joy was probably right. An amendment to his key to include *granarius* is given later, since the Handbook is probably the work most used by moderately expert workers even today.

In 1968 Dr. Vogt of Darmstadt, W. Germany, produced a paper on the genus in *Entomologische Blätter*, and later also a key which was utilised in the appropriate volume of *Die Käfer Mitteleuropas* published in 1971. Unfortunately this key uses in two places a simple size limit, unsupported by other characters, to separate major groups, these size limits being contradicted in the descriptions in the text. It is therefore very liable to mislead unless the species are already fairly well-known to the user, and the object of the key is thus defeated. It failed to identify my *granarius* on another count (see later) but the description of *granarius*, supporting as it did the descriptions from other sources, encouraged my growing belief that a number of specimens in my possession were in fact that species.

I first took *granarius* in 1952, when I found it in some quantity in flood refuse at Westbere near Canterbury (O.S. reference TR 195607). I recognised then that the specimens were distinct from *convexiusculus* Stephens and I therefore kept about twenty individuals, but I was unable to identify it from such keys as were available and I contented myself with placing it in the *tristis* group over a query label as a fourth species. Last year I belatedly decided to do something about it, and in looking around for fresh material I almost immediately found further examples in preserved flood-rubbish extracts from various places in the Rother Valley (Kent) collected in November 1974, and again in fresh flood debris from Smallhythe, Tenterden, in May 1978.

After pondering Vogt's description I sent some specimens to Mr. Allen, suggesting that they might be *granarius* despite the disharmony with Vogt's key. He replied however, quite properly, that in Vogt's 1968 paper (which he was kind enough to lend me) the underside characters illustrated and described were such as to preclude *granarius*. Nevertheless he was not happy to declare them *convexiusculus*, the only reasonable alternative, of which I had sent a series for comparison, because of the obvious differences in the mesosterna and aedeagi. Mr. Allen was also unwilling to commit himself because the aedeagi in the first few specimens I dissected showed some variation amongst themselves, and some did not conform to Vogt's pattern for *granarius,* or (for that matter) for *convexiusculus* either. Most of the males I have dissected since do in fact conform to Vogt's *granarius* figure.

These Cercyons were certainly not *convexiusculus*. They are distinguished from that species by all the characters listed in the table appended to this article. Either they were a new species which in view of the quite different sternal structure resembled *granarius* in its upperside appearance

and in the dissection to a remarkable degree, or they were in fact *granarius* itself, that species having been inadvertently misplaced in Vogt's key. I favoured the latter alternative, which required that Vogt had failed to appreciate or had for some other reason disregarded the group character (strongly raised meso-/metasternum with a window between) by which *granarius* should have been placed in the *tristis* group of marsh-inhabiting species instead of with the somewhat mixed bag which comprises the remaining bulk of Cercyons. I thought it significant that *granarius* should be described as *reticulate* (albeit feebly so) and *extremely convex* and furthermore should be found in wet places — all characteristics of the *tristis* group — if in fact the underside characters were so different; and I found support for the postulate in Sharp's paper where *granarius* Erichson is placed by Sharp within that group. His description probably comes from a Continental source; it is unlikely to have been from his specimen since according to Allen (1969) the latter is apparently *convexiusculus* (*teste* J. Balfour-Browne).

At the suggestion of Mr. Brendell of the British Museum I sent some specimens to the Museum, commenting that we had a species listed in the Check List which we could not find, and a species found which we could not identify, and pointing out the convenience that would result if these were *granarius*. Mr. Peter Hammond replied saying that he agreed that they were *granarius* and that they corresponded with specimens from Alsace to which Belfour-Browne had appended that label. He remarked that the underside profile of the species shown by Vogt in his paper was incomplete, and indeed it is. Since *granarius* Erichson is apparently uncommon on the Continent it is possible that Vogt had not seen specimens, or perhaps had not cared to interfere too much with those he had.

Although quite content with Mr. Hammond's determination I thought it proper to refer the specimens to an authority in a place where *granarius* is known to be native, and Huijbregts' confirmation has settled the matter for us beyond doubt.

Vogt's key in *Die Käfer Mitteleuropas* should now be amended as follows: Couplet (4) properly directs *granarius* to (2)) instead of to (5), and hence couplet (16) becomes redundant. From (22) the key cannot be rescued without major surgery, but it may be completed in the same fashion as the amended key for Joy's Handbook given next. As indicated above, Vogt's key should be used with caution because of its reliance on size limits.

The Key for identification of *Cercyon* species in Joy's *Practical Handbook* may be expanded to include *granarius* as follows. (I have included also *alni* Vogt, for the sake only of the completion of Vogt's key above. *C. alni* was described by Vogt in his 1968 paper referred to above, on the strength of a single specimen taken near his home town of Darmstadt,

West Germany; it would appear nevertheless to be a good species well differentiated by reason of its characteristic puncturation and underside features. However, we are unlikely to be concerned with it in this country.). The key is taken up at 17 (22).

17 (22) Elytrae with interstices finely or coarsely shagreened with at most a few small punctures (somewhat more dense towards base in *granarius*). Mesosternum and metasternum raised centrally, the raised 'lamina' of the former with its surface prolonged rearwards to touch or almost touch the latter, leaving a distinct and practically closed cavity between them, visible in side view.

18 (19) Striae very fine, disappearing in final third except for traces of 1 and 2.
(Mesosternal lamina broad, apex of elytra gradually suffused with red, upper surface dull) ... ... *minutus* Muls. (*tristis* Ill.)[3].

19 (18) Striae at least as strong at apex as at base.

20 (20a) Punctures on interstices in a single row, except irregularly biserial close to the base. (Mesosternal lamina narrow, elytra coarsely shagreened, yellow apical field fairly clearly demarcated ... *alni* Vogt.

20a (20) Punctures on interstices, if present, not uniserial.

20b(20c) Without or almost without punctures on interstices. Palps clear yellow. Striae deepened towards apex, intervals at apex clearly convex. (Shagreening strong and close, surface more dull than in any other species of the group, yellow apical field clearly demarcated, mesosternal lamina fairly broad; elytra clearly more acuminate at apex.) ... ... *sternalis* Sharp.

20c(20b) Interstices distinctly punctured, and not at all convex at apex. Palps dark.

20d (21) Shagreening feeble; uniformly shining, hence the puncturation both of the striae and of the intervals more distinct. Punctures of striae especially towards the sides very large and clear (view from side). Mesosternal lamina broad ... ... *granarius* Er.

21 (20d) Shagreening closer and stronger, surface slightly dull. Punctures of striae small. Mesosternal lamina narrow (about 3 times as long as broad) ... *convexiusculus* Steph.

22 (17) Elytrae with interstices not shagreened ... ...

The distinction between *granarius* Er. and *convexiusculus* Steph. is clear enough, but these species have evidently been confused in the past, and it would be naïve to assume that there will be no difficulty in the future. The characters separating the two species are therefore given in the form of a table.

[3] It has since been established that Fabricius's *minutus* was a *Cryptopleurum*, and so Illiger's name is the valid one. — A.A.A.

	C. granarius Er.	*C. convexiusculus Steph.*
Mesosternum	Broad, cavity large.	Narrow, cavity small
Microsculpture	Reticulate but shining, especialy towards apex.	Reticulate and somewhat dull.
Striae	Striae, particularly 5-8, of very much larger punctures, dwarfing the interstitial punctures (view from side). Striae not impressed at apex, appearing as rows of discrete punctures.	Striae of very much smaller punctures, about twice the diameter of the interstitial punctures. Striae impressed to apex.
Aedeagus	Parameres much shorter than central lobe.	Parameres longer than central lobe.

May I tender my grateful thanks to Mr. A. A. Allen, Mr. Martin Brendell, Mr. Peter Hammond, Dr. Garth Foster and Mr. E. Philp for their advice and prompt provision of documents; and to M. J. Huijbregts for his final determination.

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[The secure reinstatement of the rare *C. granarius* in our list is very interesting and satisfactory, and Mr. Parry is to be congratulated both on his discovery and on the painstaking manner in which he has established it; the more so, in that the ordinary run of collectors do not trouble themselves overmuch with this group. I would stress that the treatment of *granarius* in my 1969 paper simply followed the opinions of two workers better qualified than myself to judge—opinions to which their studies of the genus lent weight, and from which, having seen neither Sharp's putative specimen nor any authentic material of the species, I had no reason to dissent. Now, with hindsight, what I said concerning the systematic position of *granarius* must of course be ignored; it turns out that Sharp was, after all, right in placing it in the *tristis*-group of species (*Cerycon* Rey), as Mr. Parry has convincingly shewn. From its occurrence in a restricted area of East Kent in the latter half only of this century, contrasting with a previous total lack of *authenticated* records, the species may well be a relative newcomer to our fauna. It is the second to be restored to the list since I wrote (1969), the first being *bifenestratus* Küst. (of which, likewise, the original British record is in doubt). — A. A. A.]